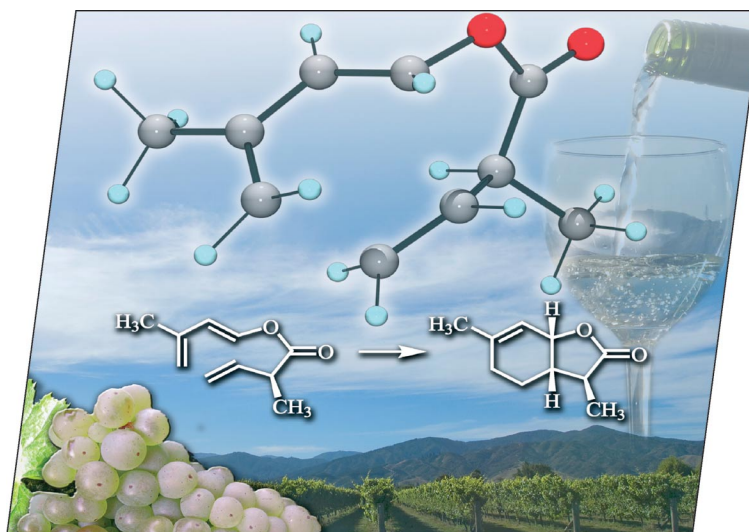




A union formed by chemical societies in Europe (ChemPubSoc Europe) has taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further members of ChemPubSoc Europe (Austria, Czech Republic and Sweden) are Associates of the two journals.

## COVER PICTURE

The cover picture shows a typical panoramic scene encountered in New Zealand: a vineyard situated near Blenheim at the base of the Southern Alps. Wine lactone, a sweet-smelling compound that contributes significantly to the aroma of a variety of white wines, is depicted in a reaction scheme in the foreground. The intramolecular Diels–Alder cycloaddition leading to wine lactone is diastereoselective, and the computationally predicted transition state is illustrated against the sky background. Scheurebe grapes and Riesling wine being poured into a glass are also depicted. Wine lactone is found in wines produced from both Scheurebe and Riesling grapes. Details are discussed in the article by M. A. Brimble et al. on p. 4405ff.



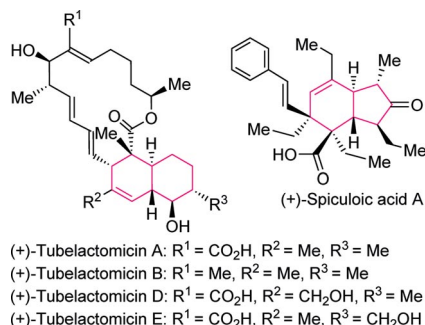
## MICROREVIEW

### Intramolecular Diels–Alder Reactions

K.-i. Tadano\* ..... 4381–4394

Natural Product Synthesis Featuring Intramolecular Diels–Alder Approaches – Total Syntheses of Tubelactomicins and Spiculoic Acid A

**Keywords:** Intramolecular Diels–Alder reaction / Natural products / Total synthesis / Cycloaddition / Tubelactomicins / Spiculoic acid A



The total syntheses of (+)-tubelactomicins A, B, D, and E and the total synthesis of (+)-spiculoic acid A, all accomplished in the author's group by intramolecular Diels–Alder approaches, are summarized. The synthesis of (+)-tubelactomicin A by the Tatsuta group and the total synthesis of (–)-spiculoic acid A by the Baldwin/Lee group are also summarized.

## SHORT COMMUNICATIONS

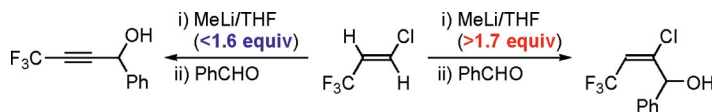
### Product-Selective Reaction

A. Miyagawa, M. Naka, T. Yamazaki,\*  
 T. Kawasaki-Takasuka ..... 4395–4399



Unusual Behavior of the Anionic Species from (*E*)-1-Chloro-3,3,3-trifluoropropene (HCFC-1233t)

**Keywords:** Fluorine / Rearrangement / Alcohols / Alkenes



(*E*)-1-Chloro-3,3,3-trifluoropropene was smoothly deprotonated by MeLi at the position  $\beta$  to the  $\text{CF}_3$  group, and exclusive formation of propargylic alcohols was observed by addition of appropriate carbonyl

compounds as long as up to 1.6 equiv. of MeLi was used, whereas more than 1.7 equiv. of the same base led to selective formation of allylic alcohols.

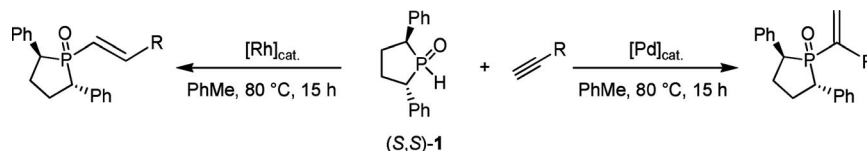
### Hydrophosphinylation

A. Duraud, M. Toffano,\*  
 J.-C. Fiaud ..... 4400–4403



Regioselective Metal-Catalyzed Hydrophosphinylation of Alkynes: Synthesis of Enantiopure  $\alpha$ - or  $\beta$ -Substituted Vinylphosphane Oxides

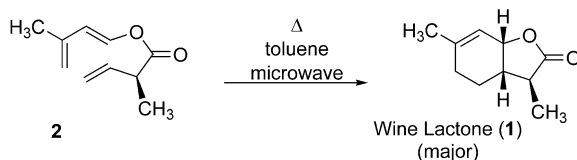
**Keywords:** Alkynes / Homogeneous catalysis / Phosphorus heterocycles / Regioselectivity



Palladium was found to catalyze the regioselective Markovnikov addition of chiral enantiopure 1*r*-oxo-2*c*,5*t*-diphenylphospholane (1) to terminal alkynes, whereas

rhodium catalysis offers selectively the (*E*)-anti-Markovnikov adduct. This strategy offers rapid access to chiral and enantiopure  $\alpha$ - or  $\beta$ -substituted-1-alkenylphospholanes.

## FULL PAPERS



Wine lactone (**1**), a highly scented organic compound, has been synthesised by using an intramolecular Diels–Alder (IMDA) cycloaddition. Microwave irradiation of a range of ester-containing nonatrienes re-

sulted in a kinetically controlled distribution of isomeric bicyclo[4.3.0] lactones. Transition-state analysis by DFT at the B3LYP/6-31+G(d) level was in agreement with the experimental results.

### Intramolecular Diels–Alder Reactions

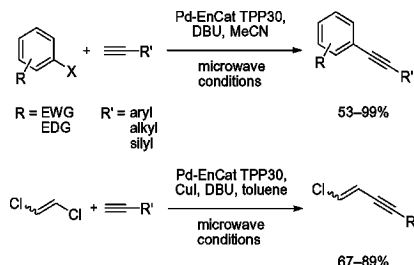
**P. D. O'Connor, U. B. Kim,  
M. A. Brimble\*** ..... 4405–4411

Synthesis of (±) Wine Lactone and Its Analogues by a Diels–Alder Approach



**Keywords:** Diels–Alder reactions / Cycloaddition / Density functional calculations / Flavour / Lactones

Without using any copper species and under robust conditions, rapid microwave-assisted Sonogashira cross-coupling of aryl iodides and bromides with terminal alkynes using Pd–EnCat™ TPP30 were conducted. Both electron-rich and electron-deficient aryl halides reacted smoothly with a broad variety of terminal alkynes in MeCN at 100–120 °C.



### Sonogashira Cross-Coupling

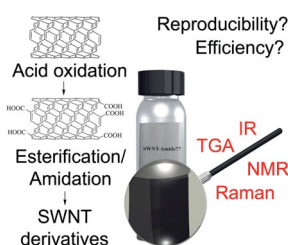
**J. Sedelmeier, S. V. Ley,\* H. Lange,  
I. R. Baxendale** ..... 4412–4420

Pd–EnCat™ TPP30 as a Catalyst for the Generation of Highly Functionalized Aryl- and Alkenyl-Substituted Acetylenes via Microwave-Assisted Sonogashira Type Reactions



**Keywords:** Cross-coupling / Heterogeneous catalysis / Reusable catalyst / Palladium / Microwave chemistry / Enynes

Can we trust chemistry? Numerous methods for covalent functionalization of SWNTs have been reported in the literature. However, only a few studies have been concerned with the reproducibility and relative efficiency of these methods. Moreover, the fact that all batches of SWNTs and oxidized SWNTs are essentially different is sometimes neglected. This survey deals with these important topics.



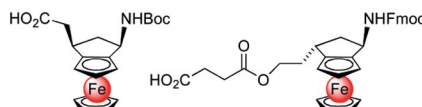
**C.-H. Andersson,  
H. Grennberg\*** ..... 4421–4428

Reproducibility and Efficiency of Carbon Nanotube End-Group Generation and Functionalization



**Keywords:** Nanotubes / Nanotechnology / Functionalization / Esterification / Amidation

As a contribution to bioorganometallic chemistry, a dia- and enantioselective synthesis of novel carbocyclic amino acid analogues with a 1,2-ferrocenocyclopentene backbone has been developed.



**A. Hunold, I. Neundorff, P. James,  
J. Neudörfl, H.-G. Schmalz\*** ... 4429–4440

Stereoselective Synthesis of New Ferrocene-Derived Amino Acid Building Blocks

**Keywords:** Metallocenes / Amino acids / Chirality / Stereochemistry / Solid-phase synthesis / Peptidomimetics

# CONTENTS

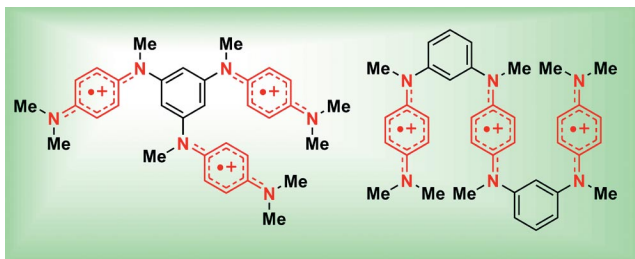
## Polycationic Multispin Systems

A. Ito,\* D. Sakamaki, H. Ino,  
A. Taniguchi, Y. Hirao, K. Tanaka,\*  
K. Kanemoto,\* T. Kato\* ..... 4441–4450



Polycationic States of Oligoanilines Based on Wurster's Blue

**Keywords:** Radical ions / Oxidation / Magnetic properties / Redox chemistry / EPR spectroscopy



The spin multiplicities of the dominant species of two oligoanilines based on Wurster's blue generated by three equivalents of oxidant have been found to exist as quartet and doublet states at low temperatures.

These results demonstrate that the intramolecular connectivity between the spin-containing units decisively influences the spin preference of the multispin systems based on oligoanilines.

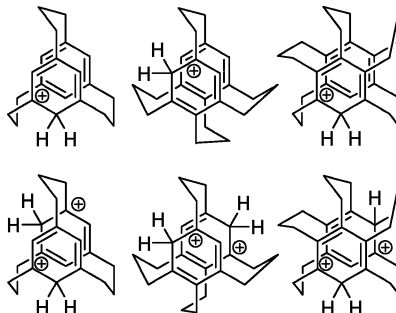
## Cationic Multibridged Cyclophanes

K. K. Laali,\* T. Okazaki, T. Kitagawa,  
T. Shinmyozu ..... 4451–4457



Stable-Ion NMR Spectroscopy and GIAO-DFT Study of Carbocations Derived from Multibridged [3<sub>n</sub>]Cyclophanes

**Keywords:** Cyclophanes / Protonation / Carbocations / Donor–accepter systems / Superacidic systems



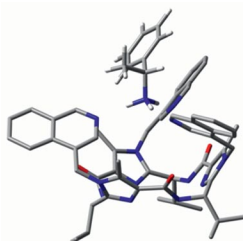
Stable-ion NMR spectroscopy and theoretical studies (GIAO-DFT and NICS) are reported for carbocations derived from multibridged [3<sub>n</sub>] (*n* = 3, 4, and 5) cyclophanes.

## Enantiomeric Recognition

M. Schnopp, G. Haberhauer\* ... 4458–4467

Highly Selective Recognition of  $\alpha$ -Chiral Primary Organoammonium Ions by C<sub>3</sub>-Symmetric Peptide Receptors

**Keywords:** Peptides / Receptors / Macrocyclic ligands / Enantioselectivity / Organoammonium ions



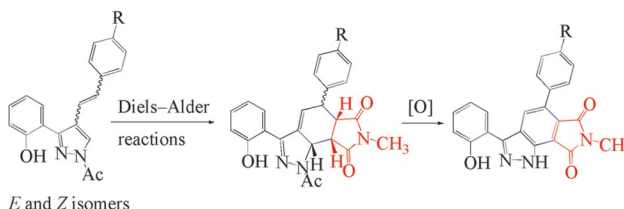
Chiral macrocyclic imidazole peptides with different binding arms were synthesized. The investigation of their ability to bind  $\alpha$ -chiral primary organoammonium ions in CDCl<sub>3</sub> shows that these cyclopeptides can be used as excellent and highly selective receptors for enantiomeric discrimination.

## Diels–Alder Reactions

V. L. M. Silva, A. M. S. Silva,\*  
D. C. G. A. Pinto, J. Elguero,  
J. A. S. Cavaleiro ..... 4468–4479

Synthesis of New 1*H*-Indazoles through Diels–Alder Transformations of 4-Styrylpyrazoles under Microwave Irradiation Conditions

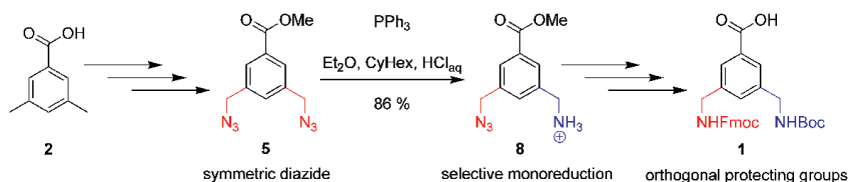
**Keywords:** Diels–Alder reaction / Microwave irradiation / Indazoles / Cycloaddition / Nitrogen heterocycles / Dehydrogenation



Diels–Alder cycloaddition reactions between (*E*)- or (*Z*)-1-acetyl-3-(2-hydroxyphenyl)-4-styrylpyrazoles and *N*-substituted maleimides under microwave irradiation and solvent-free conditions yield tetrahydroindazoles; the latter can be dehydrogenated to give the corresponding indazole-type compounds.

tion and solvent-free conditions yield tetrahydroindazoles; the latter can be dehydrogenated to give the corresponding indazole-type compounds.

## Unsymmetric Tweezer Receptors



H. Y. Kuchelmeister,  
C. Schmuck\* ..... 4480–4485

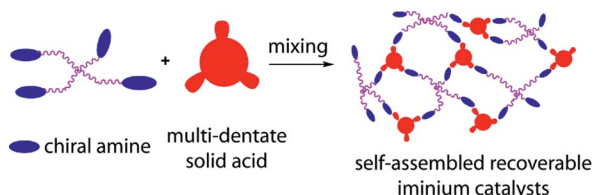
An Efficient Synthesis of an Orthogonally Protected Aromatic Diamine as Scaffold for Tweezer Receptors with Two Different Arms

**Keywords:** Protecting groups / Template synthesis / Peptides / Solid-phase synthesis / Receptors

The synthesis of an orthogonally protected template **1** for the solid-phase synthesis of unsymmetrical tweezers is presented. The synthesis consists of seven steps with an

overall yield of 34%. The key step is the selective mono reduction of a symmetric diazide taking advantage of a biphasic reaction mixture.

## Immobilized Organocatalysts



J. Li, X. Li, P. Zhou, L. Zhang, S. Luo,\*  
J.-P. Cheng\* ..... 4486–4493

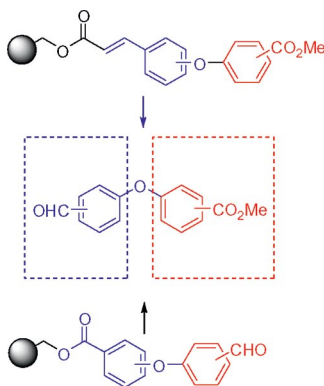
Chiral Primary Amine–Polyoxometalate Acid Hybrids as Asymmetric Recoverable Iminium-Based Catalysts

**Keywords:** Polyoxometalates / Amines / Asymmetric catalysis / Supported catalysts / Diels–Alder reactions

A new strategy for the immobilization of iminium organocatalysts has been developed through the acid–base assembly of

multidentate chiral primary amines and solid polyacids and has been used in the Diels–Alder reactions of  $\alpha$ -substituted acroleins.

## SPOS of Natural Products



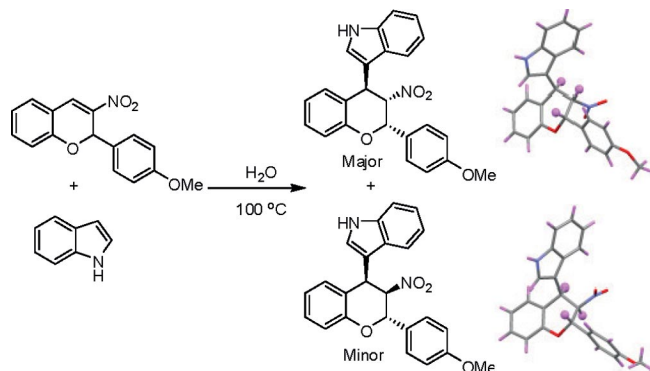
N. Jung, S. Bräse\* ..... 4494–4502

Synthesis of Natural Products on Solid Phases via Copper-Mediated Coupling: Synthesis of the Aristogin Family, Spiraformin A, and Hernandial

**Keywords:** Solid-phase synthesis / Combinatorial chemistry / Ullmann coupling / Natural products / Synthetic methods / Aristogins / Diaryl ether

The formation of resin-bound precursors of natural products and the subsequent cleavage of these substances are described. The common structural motif of the synthesized natural products is a diaryl ether functionality that was built up via an Ullmann-type reaction of phenols and aryl halides on solid phases.

## Green Ways to Indolylchromans



P. M. Habib, V. Kavala, B. R. Raju,  
C.-W. Kuo, W.-C. Huang,  
C.-F. Yao\* ..... 4503–4514

“On-Water”-Promoted *C*-Alkylation of Indoles with 2-Aryl-3-nitro-2*H*-chromenes under Catalyst-Free Conditions

**Keywords:** “On-water” chemistry / Alkylation / 2*H*-Chromenes / Indoles / Green chemistry / Synthetic methods

An efficient green protocol for the synthesis of indolyl(nitro)chromen derivatives by employing “on-water” conditions is re-

ported. The factors influencing the diastereoselective addition of various indoles with nitrochromenes have been studied.



# CONTENTS

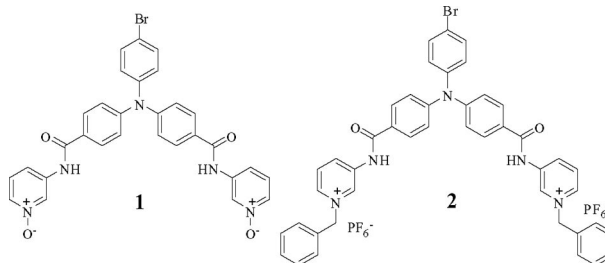
## Anion Recognition

K. Ghosh,\* G. Masanta,  
A. P. Chattopadhyay ..... 4515–4524



Triphenylamine-Based Pyridine *N*-Oxide and Pyridinium Salts for Size-Selective Recognition of Dicarboxylates

**Keywords:** Receptors / Anions / Anion recognition / Fluorimetric detection



Triphenylamine-based receptors **1–2** have been designed and synthesized for size-selective recognition of dicarboxylates. Binding takes place at charged sites with concomitant PET-based (photo-induced

electron transfer) quenching of emission of triphenylamine motif. Receptor **2** shows more effective binding than **1** and is selective for pimelate.

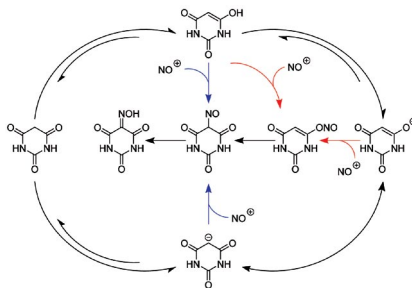
## Ambident Nucleophiles

L. García-Río,\* J. C. Mejuto, M. Parajó,  
M. Pérez-Lorenzo ..... 4525–4533



Enol Nitrosation Revisited: Determining Reactivity of Ambident Nucleophiles

**Keywords:** Enols / Ketones / Nitrosation / Reaction mechanisms / Tautomerism



An alternative methodology for determining chemical reactivity of ambident nucleophiles is reported. This approach is based on the different operating mechanisms for enol nitrosation.

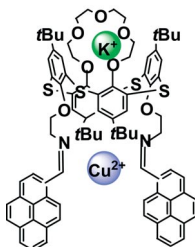
## Switchable Fluorescent Chemosensor

M. Kumar,\* A. Dhir,  
V. Bhalla ..... 4534–4540



On–Off Switchable Binuclear Chemosensor Based on Thiacalix[4]crown Armed with Pyrene Moieties

**Keywords:** Thiacalixarenes / Crown compounds / Pyrene / Fluorescence / Molecular devices / Chemosensor



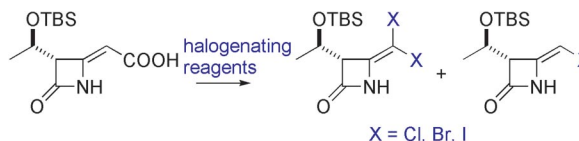
A new fluorescent “on–off” switchable chemosensor based on a thiacalix[4]arene with a 1,3-*alternate* conformation and two different types of cation binding sites has been synthesized.

## Halodecarboxylation of $\beta$ -Lactams

P. Galletti, A. Quintavalla, C. Ventrici,  
D. Giacomini\* ..... 4541–4547

Halodecarboxylation Reaction of 4-Alkylidene- $\beta$ -lactams

**Keywords:** Nitrogen heterocycles / Lactams / Halodecarboxylation / Halogenation / Alkenes



A Hunsdiecker-type halodecarboxylation reaction has been used for the synthesis of a new family of 4-alkylidene- $\beta$ -lactams. The scope and limits of the synthesis of

(chloro-, bromo-, and iodoalkylidene)azetidinones are explored. The unexpected formation of dihalovinyl derivatives was investigated by  $^1\text{H}$  NMR analysis.

\* Author to whom correspondence should be addressed.



Supporting information on the WWW (see article for access details).

If not otherwise indicated in the article, papers in issue 25 were published online on August 11, 2009